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JW/B

02605.000030

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: )  
ANGELICA GOLUBKOV ET AL. ) Examiner: C. Toomer  
Application No.: 09/848,293 ) Group Art Unit: 1714  
Filed: May 4, 2001 )  
For: MOTOR FUEL FOR DIESEL, )  
GAS-TURBINE AND TURBOJET )  
ENGINES ) November 18, 2004

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

FIFTH INFORMATION DISCLOSURE STATEMENT

Sir:

In compliance with the duty of disclosure under 37 C.F.R. § 1.56 and in accordance with the practice under 37 C.F.R. §§ 1.97 and 1.98, the Examiner's attention is directed to the documents listed on the enclosed Form PTO-1449. Since the U.S. Patent and Trademark Office waived the requirement under 37 C.F.R. § 1.98 (a)(2)(i) for submitting a copy of each cited U.S. patent and each U.S. patent application publication for all U.S. national patent applications and for all international applications that have entered the national stage under 35 U.S.C. § 371, copies of these documents are not enclosed.

Copies of the other documents are enclosed.

This Information Disclosure Document is to disclose documents cited in an August 18, 2004 Office Action in a corresponding European Application. A copy of the Office Action is enclosed.

The concise explanation of relevance for this non-English document may be found, inter alia, in the enclosed English language abstract, in the enclosed English language translation, and/or in the enclosed EP Office Action.

Applicants submit that the claims in the present case are patentable over the cited documents, at least for the reasons of record (e.g., as mentioned by the Examiner in the reasons for allowance).

Specifically, JP 7-118670 discloses a diesel fuel composition for preventing engine wear. This composition can contain gas oil, a low-temperature fluidity improver, a cetane number improver, a cleaning agent and a rustproof agent. Also, this composition can contain a defoamant. However, the amounts of these oxygen-containing components taught in JP 7-118670 constitute a very small fraction of the fuel. For example, in Example 3, the amounts based on the ppm disclosure are about 0.12% or 0.11% of the composition. These amounts are too small to result in a fuel composition for a diesel, gas-turbine or turbojet engine, which would possess the presently claimed physical properties or functionality. In fact, some of the fuel additives taught in JP 7-118670, such as a cleaning agent and a rustproof agent, are included in order to protect the engine, and not to improve the combustion or stability properties of the fuel.

There is no motivation to change the proportions of the ingredients in JP 7-118670 to achieve the advantages of the presently claimed invention, because such advantages are clearly not recognized or suggested. Furthermore, JP 7-118670 specifically teaches that increasing the amounts of the additives beyond those specifically disclosed would lead to detrimental results (see paragraphs [0012]-[0013]). Therefore, since JP 7-118670 fails to disclose the fuel composition having the presently claimed physical properties and functionality and fails to teach or suggest the advantages of the presently claimed invention, Applicants respectfully submit that the present claims are clearly patentable over JP 7-118670.

U.S. Patent No. 5,314,511 (Liotta) is directed to a diesel fuel, which is said to improve fuel efficiency and reduce emissions while meeting strict California fuel standards. Liotta teaches that this goal can be achieved by combining an organic peroxide additive, such as tertiary butyl peroxide, with propylene or butylene glycol monoalkyl ether or polyol. This combination results in the fuel containing oxygen-containing compounds with, at most, three oxygen-containing functional groups as defined in the present claims (–OH, –O–O–, and –O–).

While Liotta states that other ingredients, such as conventional diesel fuel additives, may be present in the fuel, there is no disclosure or suggestion that an additive having one of the presently claimed oxygen-containing functional groups, other than the hydroxyl, the peroxy and the ether groups already present in the fuel, should be selected from a litany of possible choices without disrupting the purported synergy or producing other negative results. For example, an alkyl nitrate ignition improver, which is mentioned in the enclosed Encyclopedia of Chemical Technology, would lead to an increased emission of nitrogen oxide compounds, which is precisely what Liotta strives to avoid. Furthermore, there is no need to add such an alkyl nitrate, because the fuel in Liotta already contains a cetane improver and the fuel in Liotta already has an acceptable cetane number, which was raised by the addition of the specifically taught components.

Specifically, the cetane number of the fuel in the Example in Liotta was raised from 43 to 53 by the addition of DTBP and TPM, satisfying the minimum requirement in California, which is 48. There is clearly no need to add another cetane improver, which (i) is not necessary; (ii) increases nitrogen oxide emissions Liotta is trying to reduce; and (iii) increases the cost of the fuel. In addition to being very expensive, nitrate cetane number improving agents are well-known to be highly volatile and semi-explosive, which makes them difficult and undesirable to handle. Clearly, based on these well-known facts a person skilled in the art would not be motivated to add alkyl nitrate cetane number improving agents to fuel unless absolutely necessary.

In the presently claimed invention, Applicants have found that an oxygen-containing component comprising at least two different compounds containing at least four different oxygen-containing functional groups is needed to achieve proper compatibility between diesel fuel and oxygen-containing compounds to produce a motor fuel composition, which is homogeneous, water-tolerant, burns evenly throughout the mixture, reduces harmful pollutants and can be produced from renewable resources.

The documents listed in the attached Form PTO-1449 fail to disclose either these or any other reasons for the need to use the presently claimed oxygen-containing component. Furthermore, these documents fails to disclose or suggest a fuel having reduced emission of pollutants comprising the presently claimed oxygen-containing compounds, which fuel is homogeneous and has the properties:

- (i) density at 20°C of not less than 0.775 g/cm<sup>3</sup>;
- (ii) cloud temperature is not higher than 0°C at atmospheric pressure;
- (iii) stable at atmospheric pressure from a cloud temperature of -50°C to an initial boiling point of 180°C; and
- (iv) amounts of liquid evaporated by boiling at atmospheric pressure

include:

- not more than 25% of the total volume of the motor fuel composition distills at temperatures no higher than 100°C;
- not more than 35 % of the total volume of the motor fuel composition distills at temperatures no higher than 150°C;
- not more than 50% of the total volume of motor fuel composition distills at temperatures no higher than 200°C ;
- not less than 98% of the total volume of the motor fuel composition distills at temperatures no higher than 400°C.

If the Examiner wishes to raise any issues, the Examiner is requested to contact Applicants' undersigned attorney by telephone as soon as possible prior to taking any further action.

**STATEMENT UNDER 37 C.F.R. § 1.97(e)**

Each item of information in this information disclosure statement was first cited in any communication from a foreign Patent Office in a counterpart foreign application not more than three months prior to the filing date of this Statement.

**CONCLUSION**

It is respectfully requested that the above information be considered by the Examiner and that a copy of the enclosed Form PTO-1449 be returned indicating that such information has been considered.

We also enclose a check for the required fee of \$180.00 to cover the Information Disclosure Statement under 37 C.F.R. § 1.97(d)(2).

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our

address given below.

Respectfully submitted,

  
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FORM PTO 1449 (modified) U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE LIST OF REFERENCES CITED BY APPLICANT(S) (Use several sheets if necessary)			ATTY DOCKET NO. <b>02605.000030</b>		APPLICATION NO. <b>09/848,293</b>		
			APPLICANT <b>Angelica Golubkov et al.</b>				
			FILING DATE <b>May 4, 2001</b>		GROUP <b>1714</b>		
U.S. PATENT DOCUMENTS							
*EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
		<b>5,314,511</b>	<b>05/24/94</b>	<b>Liotta, Jr.</b>	<b>44</b>	<b>322</b>	
FOREIGN PATENT DOCUMENTS							
		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION YES/NO/ OR ABSTRACT
	<b>JP</b>	<b>7-118670</b>	<b>05/09/95</b>	<b>Japan</b>			<b>Translation</b>
OTHER DOCUMENT(S) (Including Author, Title, Date, Pertinent Pages, Etc.)							
		<b>Encyclopedia of Chemical Technology, 4<sup>th</sup> ed., vol. 12, pp. 378-381 (1994).</b>					
EXAMINER			DATE CONSIDERED				

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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